

PATENT
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
Antoon J.G. van Rossum and)
Antonius F.M. Bertels)
Serial No.: 10/815,942)
Filed: April 2, 2004)
Title: REMOVABLE PROTECTIVE COATING)
Examiner: Nicole R. Blan
Art Unit: 1792
Conf. No.: 8940

Commissioner for Patents
Mail Stop-Appeal
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Sir:

This is an Appeal Brief filed in support of Appellants' Notice of Appeal filed May 1, 2008. Appeal is taken from the non-final Office Action mailed March 18, 2008 (hereafter, "Office Action"). Please charge any fees to our Deposit Account No. 19-0733. In addition, any extensions of time necessary for acceptance or entry of this paper are hereby requested.

I. STATEMENT OF THE REAL PARTY IN INTEREST

The owner of this application and the real party in interest is RSB Laboratorium B.V. of The Netherlands.

II. STATEMENT OF RELATED CASES

There are no related interferences or appeals known to Appellants.

III. STATUS OF CLAIMS

Claims 1-28 have been cancelled. Claims 29 – 41 are presently pending and rejected. Appellants hereby appeal the rejection of claims 29 – 41.

IV. STATUS OF AMENDMENTS

No claim amendments have been filed since the receipt of a final rejection on August 7, 2007. On May 1, 2008, Appellants filed a Request for Pre-Appeal Brief Review. A Notice of Panel Decision from Pre-Appeal Brief Review issued on June 18, 2008.

V. SUMMARY OF CLAIMED SUBJECT MATTER

In making reference herein to various embodiments in the specification, text and/or drawings to explain the claimed invention, Appellants do not intend to limit the claims to those embodiments; all references to the specification and drawings are illustrative unless otherwise explicitly stated.

Greenhouses are utilized to provide optimum conditions, such as temperature, amount of light, and humidity, for the growth of plants. Specification at page 1, lines 4-7. A complication with greenhouses is that plants become exposed to large amounts of radiation from the warm, sunny conditions during summer with winter conditions being not so harsh. Specification at page 1, lines 7-11. A possible solution for protecting the

plants from the harmful radiation during the summer months is to provide a protective coating to the transparent surfaces of the greenhouse that can be removed when not needed during the winter months. Specification at page 1, lines 11-15.

The claims are directed to a greenhouse having a *removable* protective *coating* that is *adhered to* a substantially transparent surface. Applicants' claimed protective coating has an adhesive strength that overcomes the disadvantages of insufficient adhesion or adhesion that is too strong. Specification at page 3, lines 17-23. When the adhesive strength of a greenhouse coating is too low, the coating will not be resistant to weather influences and it will be necessary to restore or replace the coating several times per season. Specification at page 1, lines 16-28. When the adhesive strength of a greenhouse coating is too strong, it requires much effort to remove the coating at the end of the season. *Id.* In contrast to the art at the time of filing, Applicants' claimed protective coating can easily be removed from the greenhouse using a base and a complex former when its presence is no longer required.

Referring to claim 1, the protective coating includes a pigment and a binder. The binder includes a vinyl polymer based on one or more of the recited monomers and having a weight-average molecular weight of 10,000-100,000 and an acid value of 40-250. The binder also has a polydispersity of 2-6 and a glass transition temperature of 10 to 60°C. The invention of independent claim 41 is directed to a protective coating of claim 29 but having a glass transition temperature of 10 to 20°C.

Dependent claim 37 further requires that the protective coating of claim 29 comprise an adhesion promoter and claim 38 recites that the adhesion promoter is a silane. Claim 39 further requires the protective coating of claim 29 comprise a pigment

divider Claim 40 further requires the protective coating recited in claim 29 to include a thickener.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 29 and 41 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In particular, the Examiner believes that the removable nature of the coating is “irrelevant.”

Claims 29 – 37 and 39 – 41 stand rejected under 35 U.S.C. §103(a) as being unpatentable over van Rossum et al. (EP 0478067, “van Rossum”) in view of Yoshida et al. (U.S. Patent 5,574,117, “Yoshida”). Claim 38 stands rejected under 35 U.S.C. §103(a) as being unpatentable over van Rossum in view of Yoshida, and further in view of Wieczorrek (U.S. Patent 4,409,266, “Wieczorrek”). Claims 29 – 37 and 40 – 41 stand rejected under 35 U.S.C. §103(a) as being unpatentable over JP 51127181 (“Sato”) in view of Yoshida. Claim 38 is rejected under 35 U.S.C. §103(a) as being unpatentable over Sato in view of Yoshida and further in view of Wieczorrek.

VII. ARGUMENT

A. Claims 29 and 41 Are Definite

The Examiner states that claims 29 and 41 are indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention insofar as claims 29 and 41 recite a removable protective coating. The Examiner merely

considers the removable coating not part of the claimed greenhouse, calling the removable nature of the coating “irrelevant.”

Applicants respectfully disagree. MPEP 2143.03 advises that there are no “irrelevant” claim limitations. Furthermore, 35 U.S.C. § 112, ¶2 requires that the specification of a patent “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” A claim is indefinite if one skilled in the art would not understand the scope of the claim when read in light of the specification. *North American Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 1579 (Fed. Cir. 1993).

Appellants submit that the requirement of the coating being removable when it is adhered to the substantially transparent surface would readily be understood by those of skill in the art. There is nothing confusing about the claim language. Clearly, the coating is required to be adhered to the substantially transparent surface making it part of the greenhouse. The fact that the coating is removable does not prevent it from being considered part of the claimed greenhouse when the coating is adhered to the substantially transparent surface. The nature of the protective coating being removable is a physical characteristic of the coating which is appropriate for claiming. That it is removable with a removing agent comprising a base and a complex former is an entirely appropriate way to describe the chemical nature of the coating. There is nothing “irrelevant” about this claim language. The removable nature of the coating within the context of the claims distinguishes it from coatings that are not removable. Accordingly, the claim is readily understandable to one skilled in the art when read in light of the specification, and the Examiner has presented no facts to compel a different conclusion.

In addition, MPEP 706 counsels that

The goal of examination is to clearly articulate any rejection early in the prosecution process so that the applicant has the opportunity to provide evidence of patentability and otherwise reply completely at the earliest opportunity.

MPEP 706 prevents piecemeal and revisionist prosecution should a case change Examiners as in the present application. Four years after the present application was filed, the Examiner has only now raised for the first time the concern that the claims are indefinite for claiming a removable coating. But, this language was included in claim 1 as originally filed and in claim 29 added by preliminary amendment. Primary Examiner Michael Kornakov issued four substantive Office Actions on October 26, 2005, May 25, 2006, February 5, 2007, and August 7, 2007 examining the claims on the merits and held a personal interview with the inventor and Applicants' attorney on March 15, 2006. The Primary Examiner never raised the issue that the claims were somehow not understandable. The Primary Examiner understood the language because it is in fact very clear. The failure of proof, the four substantive Office Actions and MPEP 706 and 2143.03 indicate that the present rejection is inappropriate and should be withdrawn.

B. Claims 29 – 37 and 39 – 41 Are Nonobvious Over van Rossum in View of Yoshida

Claims 29 – 37 and 39 – 41 stand rejected as being obvious over van Rossum (EP 0478067) in view of Yoshida (US 5,574,117) in the Non-Final Office Action mailed March 18, 2008, page 3.

The Examiner admits that van Rossum "does not teach the specific properties of the polymer." See Office action dated March 18, 2008 at page 3. Appellants respectfully

submit that not only does van Rossum fail to teach the specific properties of the polymer, van Rossum fails to teach the polymer itself.

Instead, the Examiner must substitute the material of van Rossum with Appellants' material to arrive at the claimed subject matter. With that goal, the Examiner believes that one of skill would be motivated to optimize the materials of Yoshida, the secondary reference, and substitute the optimized materials for that of van Rossum. The Examiner's path to obviousness guided by Appellants' specification, therefore, requires two steps: 1. altering the materials of a secondary reference and (2) then substituting the altered materials for the different material in the primary reference.

That the materials of van Rossum are in fact different from the claimed materials was described in the Declaration Under 37 C.F.R. § 1.132 executed by Antonius Bertels, who is a co-inventor of the Bertels reference. The declaration was filed along with a Preliminary Amendment dated April 2, 2004 and explained how the materials of van Rossum differed from the claimed materials.

As detailed in the Amendment and Response to Office Action dated November 20, 2006 at pages 5-10, Yoshida fails to teach or suggest the claimed protective coating on a greenhouse made from a pigment and binder having the recited weight average molecular weight, acid value, polydispersity and glass transition temperature. As explained in the Amendment and Response to Office Action dated November 20, 2006, the Primary Examiner was clearly mixing values from different examples of Yoshida (i.e. alkali soluble film, acrylic rubber, alkali soluble adhesive) presumably because Yoshida provides no single actual example of a polymer that expressly recites all of the claimed requirements of weight average molecular weight,

acid value, polydispersity and glass transition temperature. In fact, Yoshida describes very different products having very different utilities such as alkali-soluble adhesives, alkali-soluble films, pressure sensitive adhesives, acrylic rubbers, alkali-soluble injection moldings and water inks.¹ Each of these specific products would likely have very different physical and chemical properties, and are presumably not interchangeable, i.e. an acrylic rubber will likely not serve as a water ink, which likely will not serve as an alkali-soluble film.

A review of the polymer examples for each of these very different products beginning at col. 20 through 60 reveals that Yoshida fails to identify claimed values for all four claimed parameters for any of the polymer examples. Many of the polymer examples have one or more parameters that are outside those recited in the present claims. For certain of the polymer examples that recite parameters within the claimed ranges such as Example 2-21 mentioned by the Examiner at page 3 of the office action, the critical parameter of glass transition temperature is glaringly absent, leaving for one of skill in the art to guess the glass transition temperature.

At page 2 of the office action, the Examiner cites the abstract for teaching a glass transition temperature for the generic acrylic polymer as being -80° or higher. However, this range begins very low and is open-ended on the high side and cannot fairly teach a glass transition temperature within Applicants' claimed range of 10°C to 60°C. This is because the specific Examples provided by Yoshida of polymers having glass transition temperatures capable of being as low as -80°C are all in the low negative numbers and are not within the claimed range of 10°C to 60°C. Accordingly, even though Yoshida

¹ Although Yoshida discloses that a film could be used for "agricultural use" this was referring to a packaging or separating film which does not direct a person skilled in the art to use the film as a protective coating on a greenhouse to block solar radiation.. Yoshida Col 8, lines 17-27.

uses the open ended “or higher” language, this language simply does not put Yoshida in possession of a range of between -80°C and 60°C nor would one of skill in the art recognize that the open-ended language included the upper limit of 60°C based on the Examples provided by Yoshida as representative of the *working* invention.

In addition, Yoshida discloses broad open-ended ranges for each type of polymer product at columns 3-9. A summary of the broad ranges for each polymer product is set forth below.

Alkali-Soluble Adhesive

Number average MW	5,000 – 200,000
Acid Value	65 or higher
Polydispersity	3 or less
Glass Transition T	0 or higher

Alkali-Soluble Film

Number average MW	10,000 –500,000
Acid Value	65 or higher
Polydispersity	4 or less
Glass Transition T	0 or higher

Pressure Sensitive Adhesive

Number average MW	10,000 – 500,000
Acid Value	
Polydispersity	1-4
Glass Transition T	-80 to -30

Acrylic Rubber

Number average MW	200,000 – 1,000,000
Acid Value	
Polydispersity	3 or less
Glass Transition T	-80 to 0

Alkali-Soluble Injection Molding

Number average MW	5,000 – 200,000
Acid Value	65 or higher

Polydispersity	4 or less
Glass Transition T	70 or higher

Water Ink

Number average MW	1,000 – 50,000
Acid Value	65 or higher
Polydispersity	3 or less
Glass Transition T	30 or higher

Yoshida describes each type of polymer product as having very different applications or utilities, yet Yoshida does not take care to discriminate the ranges for the polymers that have the asserted particular utilities. In fact, based on the above summarized disclosure from Yoshida, a polymer having a number average molecular weight of 200,000, an acid value of 65, a polydispersity of 3 and a glass transition temperature of 0°C can be a alkali-soluble adhesive, an alkali-soluble film, and an acrylic rubber *all at once!* These assertions of utility for the same polymer are obviously incredulous and causes one of skill in the art to question the disclosure of Yoshida as teaching the claimed removable coating. Likewise, according to Yoshida, a polymer having a number average molecular weight of 50,000, an acid value of 65, a polydispersity of 3 and a glass transition temperature of 70 can be a water ink, an alkali-soluble injection molding, an alkali-soluble film and an alkali-soluble adhesive *all at once!* Again, clearly, these assertions of utility for the same polymer are incredulous.

The general discussion within Yoshida about broad ranges resulting in particular polymer applications or utilities amount to no more than unreliable guesses and should be disregarded. The ranges are not representative of the applications or utilities for the various polymers as demonstrated by the fact that a single polymer having specific values

can miraculously have many different and mutually exclusive properties or utilities. Accordingly, the Examiner has not identified any reliable teaching from Yoshida of a polymer that meets all of the limitations of the claimed binder and for application as a protective coating to a greenhouse.

The Examiner has presented no evidence that optimizing the materials of Yoshida, i.e. making those materials better for their intended uses, will result in the claimed polymer and its use as a binder in a protective coating for a greenhouse. In the Amendment and Response dated November 20, 2006 at pages 5-10, Applicants explained that Yoshida does not teach a polymer with the claimed combination of properties and also provides no instructions how to pick and choose from among the many variables to arrive at the claimed subject matter.

“Optimization” is a convenient mantra for the Examiner, however, this mantra falls far short of the articulated reasoning supported by rational underpinnings required by the Supreme Court in *KSR Int'l Co. v. Teleflex, Inc.* 550 U.S. __, 14 (2007). In fact, *KSR* counsels against such a mere piecing together of prior art with conclusory statements of obviousness. The goal of *KSR* is to determine whether there “was an apparent reason to combine the known element *in the fashion claimed* by the [application] at issue.” Id. [Emphasis added].

The Examiner has not identified in Yoshida a polymer with the claimed properties that one could simply substitute for the polymer of van Rossum. The Examiner must first combine various properties from among the many polymers to arrive at the claimed polymer, with no instruction from Yoshida. Instead, one of skill must find some reason to consult Yoshida. However, the properties of the materials of Yoshida are so very

different from the claimed polymer that one of skill would not consult Yoshida as a starting point for optimization, and the Examiner has presented no evidence to the contrary. The materials of Yoshida provide no predictive value for arriving at the claimed subject matter, and so Appellants traverse the Examiner's unsupported statement that Yoshida teaches optimization to arrive at the claimed subject matter. Also, the art is not so predictable that one of skill would reasonably expect to result in the removable protective coating including the claimed polymer as a binder simply by randomly selecting various polymer parameters from materials having very different properties. In fact, Yoshida teaches that materials within the broad ranges have very different and mutually exclusive physical and chemical properties, thereby providing no guidance at all in the optimization process.

There is no teaching in Yoshida, and none has been advanced by the Examiner, that would lead one to alter the Yoshida materials to arrive at the claimed invention. Yoshida teaches a film for agricultural use, but Yoshida makes clear that it is referring to packaging materials. Finding pieces of the claimed invention among the prior art and for applications different than the claimed invention does not support an obviousness determination. Optimizing the materials of Yoshida, i.e. making those materials better for their intended uses, does not lead one of skill to the claimed invention, and there is no evidence to the contrary. Only Applicants' specification provides the roadmap to arrive at the claimed materials, and the Examiner cannot use that roadmap. Without such a teaching guiding one of skill to Yoshida and to then "optimize" the materials of Yoshida, there is no articulate reasoning or rational underpinning to support an obviousness rejection under *KSR*.

C. **Claim 38 Is Nonobvious Over van Rossum in View of Yoshida and Wieczorrek US 4,409,266**

Claim 38 stands rejected as being obvious over van Rossum (EP 0478067) in view of Yoshida (US 5,574,117) and Wieczorrek US 4,409,266 in the Non-Final Office Action mailed March 18, 2008, page 4. For the reasons expressed above, the combination of van Rossum and Yoshida fails to teach the claimed subject matter. Wieczorrek fails to cure the deficiencies of van Rossum and Yoshida. Wieczorrek is directed to a process for the shatterproof coating of glass surfaces, particularly glass bottles, by applying a physically drying priming lacquer containing a silane adhesion promoter. See Wieczorrek at Col 1, lines 7-9; Col 2, lines 16-20. Nowhere does Wieczorrek teach or suggest a greenhouse having a removable protective coating adhered to a substantially transparent surface. Accordingly, claim 38 is nonobvious.

D. **Claims 29 – 37 and 40 – 41 Are Nonobvious Over JP 51127181 in View of Yoshida**

Claims 29 – 37 and 40 – 41 stand rejected as being obvious over JP 51127181 (“Sato”) in view of Yoshida (US 5,574,117) in the Non-Final Office Action mailed March 18, 2008, page 5.

The Examiner admits that Sato “does not teach the specific properties of the polymer.” See Office action dated March 18, 2008 at page 5. Appellants respectfully submit that not only does Sato fail to teach the specific properties of the polymer, Sato fails to teach the polymer itself.

In fact, Sato teaches a light transmitting film layer that can be used for agricultural greenhouses, but instead of having the film be applied to a transparent surface such as in the claimed invention, the film is the transparent surface. Constructing a greenhouse with a light transmitting film layer in which the layer is the greenhouse is very different from a combination of a coating and a transparent surface of a greenhouse. Sato teaches the solution is in the transparent film itself and not any coating to be provided to the transparent film. If one were to remove the film described by Sato, an entire wall of the greenhouse would be removed. This is significantly different from having a protective coating that is removable as claimed in the present invention.

Even so, the Examiner must substitute the material of Sato with Appellants' material to arrive at the claimed subject matter. As described above, this is impossible because to do so would produce an inoperative embodiment: there would be no greenhouse wall. However, the Examiner believes that one of skill would be motivated to optimize the materials of Yoshida, the secondary reference, and substitute the optimized materials for that of Sato. The Examiner's path to obviousness guided by Appellants' specification, therefore, requires two steps: 1. changing the materials of a secondary reference and (2) then substituting the materials for the different material in the primary reference.

For the reasons detailed above, there is no teaching in Yoshida, and none has been advanced by the Examiner, that would lead one to alter the Yoshida materials to arrive at the claimed invention. Furthermore, none of the materials of Yoshida is disclosed as having the physical characteristics sufficient for itself to be a wall of a greenhouse. Finding pieces of the claimed invention among the prior art does not support an

obviousness determination. Optimizing the materials of Yoshida, i.e. making those materials better for their intended uses, does not lead one of skill to the claimed invention, and there is no evidence to the contrary. Only Applicants' specification provides the roadmap to arrive at the claimed materials, and the Examiner cannot use that roadmap. Without such a teaching guiding one of skill to Yoshida and to then "optimize" the materials of Yoshida, there is no articulate reasoning or rational underpinning to support an obviousness rejection under *KSR*.

E. Claim 38 Is Nonobvious Over JP 51127181 in View of Yoshida and Wieczorrek US 4,409,266

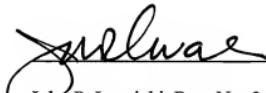
Claim 38 stands rejected as being obvious over JP 51127181 ("Sato") in view of Yoshida (US 5,574,117) and Wieczorrek US 4,409,266 in the Non-Final Office Action mailed March 18, 2008, page 7. For the reasons expressed above, the combination of Sato and Yoshida fails to teach the claimed subject matter. Wieczorrek fails to cure the deficiencies of Sato and Yoshida. Wieczorrek is directed to a process for the shatterproof coating of glass surfaces, particularly glass bottles, by applying a physically drying priming lacquer containing a silane adhesion promoter. See Wieczorrek at Col 1, lines 7-9; Col 2, lines 16-20. Nowhere does Wieczorrek teach or suggest a greenhouse having a removable protective coating adhered to a substantially transparent surface. Accordingly, claim 38 is nonobvious.

VIII. CONCLUSION

Having addressed all outstanding issues, Applicants respectfully request reconsideration and allowance of the case.

Respectfully Submitted

Dated: September 4, 2008



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IX. CLAIMS APPENDIX

Claims involved in the appeal:

Claims 1-28 (Cancelled)

29. A greenhouse comprising: a substantially transparent surface; a protective coating comprising a pigment and a binder, the binder comprising a vinyl polymer based on one or more of the monomers selected from the group consisting of methyl methacrylate, butyl acrylate, 2-ethylhexyl acrylate, ethyl acrylate, styrene, methacrylic acid and acrylic acid, having a weight-average molecular weight of 10,000-100,000 and an acid value of 40-250, wherein the binder has a polydispersity of 2-6 and a glass transition temperature of 10 to 60° C, and wherein the protective coating is adhered to said substantially transparent surface and the protective coating is removable with a removing agent comprising a base and a complex former.
30. The greenhouse according to claim 29, wherein the binder of the protective coating has a weight-average molecular weight of 15,000 to 75,000.
31. The greenhouse according to claim 30, wherein the binder of the protective coating has a weight-average molecular weight of 20,000 to 50,000.
32. The greenhouse according to claim 29, wherein the acid value of the binder of the protective coating is between 60 and 160.

33. The greenhouse according to claim 29, wherein the glass transition temperature of the binder of the protective coating is between 20 and 50° C.

34. The greenhouse according to claim 29, wherein the binder of the protective coating is present in an amount of 4-60% by weight, based on the weight of the protective coating.

35. The greenhouse according to claim 29, wherein the pigment of the protective coating is selected from the group consisting of calcium carbonate, titanium oxide, a silicate, gypsum, barite, and combinations thereof.

36. The greenhouse according to claim 29, wherein the pigment of the protective coating is present in an amount of 30-95% by weight, based on the weight of the protective coating.

37. The greenhouse according to claim 29, wherein the protective coating further comprises an adhesion promoter.

38. The greenhouse according to claim 37, wherein the adhesion promoter is selected from the group of silanes.

39. The greenhouse according to claim 29, wherein the protective coating further comprises a pigment divider.

40. The greenhouse according to claim 29, wherein the protective coating further comprises a thickener.

41. A greenhouse comprising: a substantially transparent surface; a protective coating comprising a pigment and a binder, the binder comprising a vinyl polymer based on one or more of the monomers selected from the group consisting of methyl methacrylate, butyl acrylate, 2-ethylhexyl acrylate, ethyl acrylate, styrene, methacrylic acid and acrylic acid, having a weight-average molecular weight of 10,000-100,000 and an acid value of 40-250, wherein the binder has a polydispersity of 2-6 and a glass transition temperature of between about 10°C to about 20° C, and wherein the protective coating is adhered to said substantially transparent surface and the protective coating is removable with a removing agent comprising a base and a complex former.

X. EVIDENCE APPENDIX

NONE

XI. RELATED PROCEEDINGS APPENDIX

NONE